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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,934	12/05/2003	Naofal Mohammed Wassel Al-Dhahir	GE-001-RE-CON	9648
28581	7590	08/22/2006	EXAMINER	
DUANE MORRIS LLP PO BOX 5203 PRINCETON, NJ 08543-5203			HSIA, SHERRIE Y	
			ART UNIT	PAPER NUMBER
			2622	
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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/728,934	<b>Applicant(s)</b> WASSEL AL-DHAHIR ET AL.	
	<b>Examiner</b> Sherrie Hsia	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-76 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,11,13,15,16,23,25,27,28,35,37,39,40,47,49,51,52,59,61,71 and 73-76 is/are rejected.
- 7) ☒ Claim(s) 2,5-10,12,14,17-22,24,26,29-34,36,38,41-46,48,50,53-58,60,62-70 and 72 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                              |                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/5/03</u> . | 6) <input type="checkbox"/> Other: ____.                                                |

***Reissue Applications***

1. Applicant is notified that any subsequent amendment to the specification and/or claims must comply with 37 CFR 1.173(b).

2. The reissue oath/declaration filed with this application is defective because it fails to identify at least one error which is relied upon to support the reissue application. See 37 CFR 1.175(a)(1) and MPEP § 1414.

The reissue oath or declaration contains some discussion of the concept of error but never in fact identifies a specific error to be relied upon. See MPEP 1414, pp 1400-23, 3<sup>rd</sup> paragraph.

3. Claims 1-76 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the declaration is set forth in the discussion above in this Office action.

***Specification***

4. The disclosure is objected to because of the following informalities:

A statement reading "This is a continuation of Application No. 10/247,455, filed September 19, 2002, abandoned, which is a Reissue of Application No. 09/206409, filed December 07, 1998, Patent No. 6122015." should be entered following the title of the invention or as the first sentence of the specification. Also, the current status of all nonprovisional parent applications referenced should be included.

***Claim Objections***

5. Claims 1-12, 17, 30, 31, 34, 42, 43 and 46 are objected to because of the following informalities:

In claims 1-12 and 17 line 1, and claim 2 line 2, "transmission" should be --signal-- in order to be consistent with the claim language (see page 4 of the amendment, filed 3-20-00, in the original case 09/206409) .

In claim 6 line 3, and claims 7, 10, 30, 31, 34, 42, 43 and 46 line 2, "impulse" should be --frequency--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 13, 49, 61, 75, 76 are rejected under 35 U.S.C. 102(e) as being anticipated by Frey (6304299).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the

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inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As to claims 1, 25 and 37, Frey discloses all the claimed subject matter, the steps of generating a packetized first data sequence (first overlay signal generator 103, column 3 lines 30-55), transmitting (101,105) through a channel (500), a digital television stream (HDTV, column 2 line 50-52) including the first data sequence, receiving (106,107) the digital television stream at a receiver (15) and recovering the first data sequence from the digital television stream (column 5 lines 13), comparing (108,110) the first data sequences to second data sequences (output from the second overlay signal generator 109), the second data sequences being locally generated (column 5 lines 9-24), applying the received television bit stream (18) to an adaptive filter (112) and adaptively adjusting (111, 112) filter coefficients of the adaptive filter according to the channel estimate (column 4 lines 17-36, lines 44-64) (see also Figs. 1 and 3).

As to claims 13, 49, 61, 75 and 76, Frey discloses all the claimed subject matter, the claimed generator is met by first overlay signal generator (103, column 3 lines 30-38), for generating first data sequences (17, column 3 lines 11-13) at a transmitter (10) and the transmitter for broadcasting the digital television signal (HDTV, column 2 line 50-52) including said first data sequences in a broadcast channel (500), the claimed receiver is met by the receiver (15) for receiving the digital television signal, the receiver including a channel estimator (108, 110) for comparing the first data sequences to second data sequences (output from the second overlay signal generator 109), the second data sequences being locally generated (column 5 lines 9-24), and for providing an estimate of the impulse response of the

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channel at an output of the channel estimator (column 4 lines 37-64, column 5 lines 24-32, column 6 lines 1-20), and the claimed adaptive equalizer filter is met by the equalizer (112) including an input (18) for receiving said digital television signal, and filter taps in communication with said output of said channel estimator such that filter coefficients of said adaptive filter are adjusted according to said estimate of said impulse response of said channel (column 4 lines 17-36, lines 44-64).

As to claims 3, 15, 27, 39 and 51, the claimed first data sequence is corrupted by noise after passage through said channel to said receiver is inherently disclosed by Frey (column 2 lines 62-66, column 3 line 65-column 4 line 2).

As to claims 4, 16, 28, 40 and 52, the claimed limitation is disclosed by Frey (108, 110, 109, column 4 lines 37-64, column 5 lines 24-32, column 6 lines 1-20).

As to claim 73, Frey discloses all the claimed subject matter, the claimed step of receiving the digital stream, which includes packetized video data (HDTV signal 102) and a packetized first data sequence (17, column 3 lines 11-13), from the channel (500) and recovering the first data sequence from the digital stream, is met by the receiver (107), the claimed comparing the first data sequence to a second data sequence (output from the second overlay signal generator 109), the second data sequences being locally generated (column 5 lines 9-24), to provide a channel estimate (column 4 lines 37-64, column 5 lines 24-32, column 6 lines 1-20), is met by the correlator 108, second overlay signal generator 109 and phase adjuster 110, the claimed step of applying the received digital stream to an adaptive filter (112), is met by the input to the equalizer 112, and the claimed step of adaptively adjusting filter

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coefficients of the adaptive filter according to the channel estimate, is met by the signal processor 111 and equalizer 112 (column 4 lines 17-36, lines 44-64).

As to claim 74, Frey discloses all the claimed subject matter, the claimed step of generating packetized video data is met by the HDTV signal (102), the step of generating a packetized first data sequence (17, column 3 lines 11-13) is met by first overlay signal generator (103, column 3 lines 30-38), to be compared in a receiver (15) coupled to the channel (500) to a second data (output from the second overlay signal generator 109), the second data sequences being locally generated (column 5 lines 9-24), to provide a channel estimate (column 4 lines 37-64, column 5 lines 24-32, column 6 lines 1-20) for adaptively adjusting filter coefficients of an adaptive filter (112) (column 4 lines 17-36, lines 44-64).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 11, 23, 35, 47, 59 and 71 are rejected under 35 U.S.C. 103(a) as being obvious over Frey.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

As to claims 11, 23, 35, 47, 59 and 71, Frey does not show the first data sequence which is encrypted. However, encrypting the data before transmission is well-known and commonly



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used in the art for secure communication. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frey by having the first data sequence encrypted before transmission in order to achieve the secure communication as one desired.

***Allowable Subject Matter***

8. Claims 2, 5-10, 12, 14, 17-22, 24, 26, 29-34, 36, 38, 41-46, 48, 50, 53-58, 60, 62-70 and 72 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

The prior art fails to show or fairly suggest the first data sequence transmitted in a private channel of an MPEG data channel as recited in claims 2, 14, 26, 38, 50 and 62.

The prior art also fails to show or fairly suggest the computation of a FFT of the first data sequence corrupted by noise, the computation of a FFT of the second data sequence and the division of the FFT of the first data sequence by the FFT of the second data sequence to provide the estimate of channel frequency response as recited in claims 5, 17, 29, 41, 53 and 62.

Further, the prior art fails to show or fairly suggest the first data sequence transmitted in a dynamic or rolling frame/packet structure as recited in claims 12, 24, 36, 48, 60 and 72.

***Conclusion***

10. This is a continuation of applicant's earlier Application No. 10/247,455. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bhatt discloses an automatic image scanning format converter with seamless switching having a MPEG encoder.

Hershey teaches use of wideband DTV overlay signals for brevity signaling and public safety.

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Mourot'438 shows a method of equalizing receive data block in a time-division multiple access communication system and receiver utilizing this method having a channel estimator.

Ariyavisitakul shows a tap selectable decision feedback equalizer including a channel estimator.

GB2287620 shows a digital cellular mobile radio receiver having a channel estimator and an equalizing filter.

EP000800285 shows a method for adjusting the parameters of a receiving apparatus as well as corresponding receiving apparatus and radio station having a channel estimator.

Jamal discloses a method and device for estimating transmitted signals in a receiver in digital signal transmission operations having a channel equalizer and a channel estimation circuit.

Won shows a remote control apparatus for digital cable television system.

Twitchell shows a system and methods for controlling a transmitter frequency including a service multiplex and transport.

Mourot'446 shows a channel estimation device having an estimator.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sherrie Hsia whose telephone number is (571) 272-7347.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**Any response to this final action should be mailed to:**

Box AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Or faxed to:**

**(571) 273-8300**

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service Office whose telephone number is (571) 272-1000.



**Sherrie Hsia  
Primary Examiner  
Art Unit 2622**

SH  
August 17, 2006